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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,990	06/06/2006	Arnoldus Jacobus Kruger	9173/94640	9559

24628 7590 12/15/2008  
Husch Blackwell Sanders, LLP  
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EXAMINER
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JACOBSON, MICHELE LYNN

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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12/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,990	<b>Applicant(s)</b> KRUGER ET AL.	
	<b>Examiner</b> MICHELE JACOBSON	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 17-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/17/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakashio et al (USPN 3,997,703).

Nakashio et al anticipate a packaging material comprising a polymeric base component polyolefins, vinyl chloride, polystyrenes, PVDC, polyesters, polycarbonates, etc. (col.4, l.7-41). The packaging material further comprises a barrier component which coats and lines a surface of the base component inhibiting migration of gases, vapors and liquids through the base component (col.3, l.30-35). The barrier component forms the inner layer, outer layer or an intermediate layer of the packaging material (col.5, l.55-59). When the barrier component forms an intermediate layer the polymeric base component forms a layer on either side of the barrier component. The barrier component comprises a polymeric layer comprising at least two different polymeric species which are polar and which are water soluble, having different chemical compositions and being complementary in that they are bound together physically by interpolymer complexation to form an interpenetrating physical network (col.3, l.62-68). The complementary species includes polyvinyl alcohols, polyvinyl imines,

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polyacrylamides, polyacrylic acid, carboxymethyl cellulose, hydroxymethyl cellulose etc. (col.3, l.62 - col.4, l.6). The base component and barrier component are bonded by covalent chemical bonding or electrostatic physical bonding and the base component can be activated by a flame treatment such as corona treatment (col.5, l.1-50). The packaging material forms films, sheets, tubes, pipes, bottles and containers (col.4, l.42-44).

### ***Response to Arguments***

3. Applicant's arguments filed 9/17/08 have been fully considered but they are not persuasive. Applicant asserts on page 13 of the remarks that there is no hint or suggestion of interpolymer complexation between pullulan and polyvinyl alcohol blends. Applicant evidences this assertion by presenting data from Nakashio which discloses that a multilayer film formed with a pullulan/polyvinyl alcohol blend has a higher permeation rate than a film formed from pullulan alone. However, applicant has presented no specific evidence that interpolymer complexation *always* results in increased barrier properties. Applicant asserts on page 12 of the remarks "that a polymer chemist of ordinary skill in the art would distinguish between those interpenetrating networks formed from different polar water-soluble polymer species which are physically bound together, but are not complementary in the sense employed by the present specification so that interpenetrating networks constituted thereby are not interpolymer complexes, on the one hand, and those interpenetrating networks formed from different polar water-soluble polymer species which are indeed physically

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bound together by virtue of their being complementary so that the interpenetrating networks formed therefrom are indeed interpolymer complexes, on the other hand”.

Applicant appears to be asserting one of ordinary skill would understand that applicant intended for the term complementary to be interpreted differently than it is generally understood in the art such that applicant's claimed interpolymer network would be distinguished from what is generally understood to be an interpolymer network in the prior art. This assertion is not supported by any specific definition in the specification defining the term complementary to be limited only to interpolymer interactions that increase the barrier property of the polymers. Therefore, evidence of a decrease in barrier properties cannot be depended on to prove that pullulan and polyvinyl alcohol are not complementary and physically bonded together by interpolymer complexation.

4. Additionally, applicant has failed to present any arguments or evidence that pullulan would not be physically bonded together by interpolymer complexation to polyvinyl imines, polyacrylamides, polyacrylic acid, carboxymethyl cellulose, hydroxymethyl cellulose, which are compounds disclosed for use by Nakashio and complementary species recited by applicant in claim 12.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1794

Michele L. Jacobson  
Examiner /M. J./  
Art Unit 1794